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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/580,832 | 06/22/2007 | SeongWoo Suh | 595242001000 | 8293 |

25227 7590 05/21/2008
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| EXAMINER |
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DOAN, JENNIFER

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| ART UNIT | PAPER NUMBER |
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2874

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| MAIL DATE | DELIVERY MODE |
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05/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/580,832 | SUH ET AL. | |
| | Examiner | Art Unit | |
| | JENNIFER DOAN | 2874 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-7,9-13,15,16,19-22,24-30,32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,5-7,9-13,15,16,19-22,24-30,32 and 33 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>052606</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by applicant in the Information Disclosure Statement filed on 05/26/06, have all been considered and made of record (note the attached copy of form PTO-1449).

Drawings

2. The drawings, filed on 05/26/06, are accepted.

Specification

3. The abstract of the disclosure is objected to because:

The abstract is not on a separate sheet.

Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph **on a separate sheet** within the range of 50 to 150 words.

Correction is required. See MPEP § 608.01(b).

4. Claims 9-13 are objected since claims 9-13 are dependent on claim 2, which is canceled. Appropriate correction is required.

Applicants' cooperation is requested in correcting any other errors of which applicants may become aware in the specification.

Allowable Subject Matter

5. Claims 1, 5-7, 9-13, 15-16, 19-22, 24-30, 32 and 33 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art of record fails to disclose or reasonably suggest all the limitations of claim 1. Specifically, the prior art fails to disclose a wavelength selective optical switch comprising a polarization transformation device receiving input light having a plurality of wavelength components and outputting light of a predefined polarization; a beam expanding device for expanding said light of predefined polarization in a predetermined plane; a first dispersive element receiving said expanded light of predefined polarization, and dispersing wavelength components of said expanded light of predefined polarization in said predetermined plane; a polarization conversion element receiving said dispersed wavelength components of said expanded light of predefined polarization, said polarization conversion element being pixelated generally along the direction of said dispersion such that separate pixels are associated with separate wavelength components of said expanded light, and at least one pixel of said polarization conversion element being operative to convert the polarization of light, passing through said pixel according to a control signal applied to said pixel; a second dispersive element receiving light from said polarization conversion element, and operative to combine said separate wavelength components of said light into multi-wavelength output light; a beam compressing device aligned such that said multi-wavelength output light is compressed in said predetermined plane; and a polarization selective device receiving said compressed multi-wavelength output light, the

polarization selective device being aligned such that only those components of said multi-wavelength output light having a predetermined polarization are transmitted therethrough.

The prior art of record fails to disclose or reasonably suggest all the limitations of claim 22. Specifically, the prior art fails to disclose a wavelength selective optical switch comprising a polarization transformation device receiving input light having a plurality of wavelength components and outputting light of a predefined polarization; a beam expanding device for expanding said light of predefined polarization in a predetermined plane; a dispersive element receiving said expanded light of predefined polarization, and dispersing wavelength components of said expanded light of predefined polarization in said predetermined plane; a polarization conversion element receiving said dispersed wavelength components of said expanded light of predefined polarization, said polarization conversion element being pixelated generally along the direction of said dispersion such that separate pixels are associated with separate wavelength components of said expanded light, and at least one pixel of said polarization conversion element being operative to convert the polarization of light passing through said pixel according to a control signal applied to said pixel; and a reflective surface disposed in proximity to said polarization conversion element such that light is incident thereon after passing through said polarization conversion element, and is reflected back through said pixel of said polarization conversion element.

The prior art of record fails to disclose or reasonably suggest all the limitations of claim 30. Specifically, the prior art fails to disclose a wavelength selective optical switch

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comprising a dual fiber collimator inputting a fiber optical signal having a plurality of wavelength components, and outputting said signal as light having a plurality of wavelength components; a first polarization transformation device receiving said light output from said dual fiber collimator, and outputting said light with a predefined polarization; a beam expanding device for expanding said light of predefined polarization in a predetermined plane; a dispersive element receiving said expanded light of predefined polarization, and dispersing wavelength components of said expanded light of predefined polarization in said predetermined plane; a first reflecting surface directing said dispersed wavelength components of said expanded light of predefined polarization through a polarization conversion element, said polarization conversion element being pixelated generally along the direction of said dispersion such that separate pixels are associated with separate wavelength components of said expanded light, and at least one pixel of said polarization conversion element being operative to convert the polarization of light passing through said pixel according to a control signal applied to said pixel; a second reflective surface disposed such that said wavelength components of said light of generally linear polarization, after passage through said polarization conversion element, are directed back through said beam expansion device and said dispersive element, said dispersive element combining said separate wavelength components of said output light into multi-wavelength output light; and a second polarization transformation device aligned such that that part of said multi-wavelength output light having the predetermined polarization is transmitted therethrough and is output from the switch through the dual beam collimator.

Conclusion

6. This application is in condition for allowance except for the following formal matters:

This application is in condition for allowance except for the objections of the abstract and claims 9-13. Applicant is request to correct the objections of the abstract and claims 9-13. See MPEP § 608.01(b).

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim et al. (U.S. 7,357,510) discloses a projection type 3D image display device includes a polarization conversion switch. And Itoh (US 6,513,953) discloses a polarization conversion system that is provided at a selected position along a light path.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Doan whose telephone number is (571) 272-2346. The examiner can normally be reached on Monday to Thursday from 6:00am to 3:30pm, second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer Doan/
Primary Examiner, Art Unit 2874